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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/750,301	12/30/2003	Xing Su	INTEL1240 (P16229)	1668
28213	7590	09/12/2005	EXAMINER	
DLA PIPER RUDNICK GRAY CARY US, LLP			YU, MELANIE J	
4365 EXECUTIVE DRIVE			ART UNIT	
SUITE 1100			PAPER NUMBER	
SAN DIEGO, CA 92121-2133			1641	

DATE MAILED: 09/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

*hc*

**Office Action Summary**

Application No.

10/750,301

Applicant(s)

SU ET AL.

Examiner

Melanie Yu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-12, 33 and 34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12, 33 and 34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application. Applicant's submission filed on 25 July 2005 has been entered.

#### ***Status of the Claims***

2. Claims 1 and 33 are currently amended. Claims 13-32 and 35-40 are canceled. Claims 1-12 and 33-34 are currently pending in this application.

#### ***Withdrawn Rejections***

3. Previous rejections of claims 1-12, 33 and 34 under 35 USC 112, second paragraph, 35 USC 102(b) and 35 USC 103(a) have been withdrawn in light of applicant's amendments.

#### ***Claim Rejections - 35 USC § 112***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 12 recites "at least some of the nanoparticles", it is unclear how many nanoparticles are required to provide "at least some".

#### ***Claim Rejections - 35 USC § 102***

5. Claims 1-5, 7-12, 33 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Schultz et al. (US 6,180,415).

Regarding claims 1 and 33, Schultz et al. teach a solid gel matrix comprising a gel suitable for separation of biomolecules within the gel by electrophoresis (col. 6, line 65-col. 7,

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line 3) and one or more SERS-enhancing nanoparticles (col. 10, lines 14-26; col. 14, lines 21-43) contained in the gel (col. 30, lines 58-66) the SERS-enhancing nanoparticles (PRPs and PREs are nanoparticles, col. 8, lines 13-36) having an attached probe that binds specifically to an analyte (col. 23, lines 40-48 and 54-61); a sample containing at least one analyte (col. 5, lines 59-42 and lines 60-67); and an optical detection system suitable for detecting SERS signals from the nanoparticles (col. 10, lines 14-26; col. 2, lines 56-67).

With respect to claims 2 and 5, Schultz et al. teach the gel matrix comprising a plurality of nanoparticles to provide a plurality of unique optical signatures (col. 3, lines 28-36; col. 5, lines 39-42; col. 9, lines 18-47). Shultz et al. also teach the nanoparticles providing a unique SERS-signal that is correlated with the binding specificity of the probe of the nanoparticles (col. 5, lines 25-42; col. 14, lines 41-43).

Regarding claims 3 and 4, Shultz et al. teach the SERS-enhancing nanoparticles comprising one or more Raman active tags of fluorescent dyes and nucleic acids (col. 3, lines 42-48) and at least one of the nanoparticles having a net charge (col. 30, lines 55-57).

With respect to claims 7-12, Shultz et al. teach nanoparticles being composite organic-inorganic nanoparticles comprising a core and a surface, wherein the core comprises a metallic colloid comprising a first metal and a Raman-active organic compound (col. 24, lines 44-50; col. 23, lines 35-48). Shultz et al. teach the COINs further comprising a second metal different from the first metal forming a layer over overlying the surface of the nanoparticles (silver shell and gold core, col. 23, lines 35-39) and further comprising an organic layer overlying the metal layer, which organic layer comprises a polynucleotide probe (col. 23, lines 40-48 and 54-61; col. 5,

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lines 60-67). Schultz et al. further teach at least some of the nanoparticles further comprising a fluorescent label that contributes to the optical signature (col. 23, lines 40-48).

Regarding claim 34, Shultz et al. teach a computer comprising an algorithm for analysis of the SERS signals obtained from the sample (col. 15, line 66-col. 16, line 4).

### ***Claim Rejections - 35 USC § 103***

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shultz et al. (US 6,180,415) in view of Mirkin et al. (US 2003/0211488).

Shultz et al., as applied to claim 1, teach a solid gel matrix comprising a nanoparticles with one or more Raman-active tags, but fail to teach the Raman-active tag comprising adenine.

Mirkin et al. teach a Raman-active tag being an analog of adenine, poly-adenine (par. 181), in order to utilizing a spectroscopic fingerprint in protein-protein screening.

Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to include in the solid gel matrix of Shultz et al., a nanoparticles comprising a Raman-active tag of an analog of adenine as taught by Mirkin et al., in order to provide increased sensitivity and specificity of detection of analyte.

### ***Response to Arguments***

7. Applicant's arguments regarding the rejection of claims with respect to claims 1-12, 33 and 34 have been considered but are moot in view of the new ground(s) of rejection. Applicant's arguments, see pages 5-8, filed 25 July 2005, with respect to the rejection(s) of claim(s) 1-12, 33 and 34 under 35 USC 102(b) and 35 USC 103(a) have been fully considered and the previous rejection of claims 1-12, 33 and 34 have been withdrawn in light of applicant's amendments. However, upon further consideration, a new ground(s) of rejection is made in light of applicant's

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amendment requiring a gel suitable for separation of biomolecules within the gel by electrophoresis or magnetophoresis.

*Conclusion*

No claims are allowed.

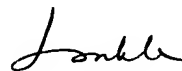
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Yu whose telephone number is (571) 272-2933. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on (571) 272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Melanie Yu  
Patent Examiner  
Art Unit 1641



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09/02/05